

What is claimed is:

[Claim 1] 1. A protective device for a high intensity discharge lamp containing an arc tube within an outer envelope comprising:

a translucent pocket formed to fit over said outer envelope of said lamp, said translucent pocket being constructed of a fine mesh having a strength sufficient to retain any shards from said lamp in the event of an arc tube burst.

[Claim 2] 2. The protective device of Claim 1 wherein said fine mesh is stainless steel.

[Claim 3] 3. The protective device of Claim 2 wherein said fine mesh is 50 mesh per inch.

[Claim 4] 4. The protective device of Claim 3 wherein said mesh is constructed of wire having a diameter of 0.0012 inches.

[Claim 5] 5. A kit for adding burst protection to a high intensity discharge lamp having an arc tube mounted in an outer envelope, said kit comprising:

a translucent pocket formed to fit over said outer envelope of said lamp, said translucent pocket being constructed of a fine mesh having a strength sufficient to retain any shards from said lamp in the event of an arc tube burst; and

a clamp for positioning and holding said mesh on said outer envelope.

[Claim 6] 6. A protected high intensity discharge lamp having an arc tube mounted in an outer envelope comprising:

a translucent pocket formed to fit over said outer envelope of said lamp, said translucent pocket being constructed of a fine mesh having a strength

sufficient to retain any shards from said lamp in the event of an arc tube burst, said translucent pocket being fixed to said lamp outer envelope.

[Claim 7] 7. A method for bursting the arc tube of a high intensity discharge lamp comprising the steps of:

operating said lamp for a sufficient time to achieve warm-up conditions;
focusing a laser on to said arc tube; and
energizing said laser at a power and for a time sufficient to cause said arc tube to burst.

[Claim 8] 8. The method of Claim 7 wherein said laser is a Nd:YAG laser.

[Claim 9] 9. The method of Claim 8 wherein said laser is operated at 532 nm with a pulse width of laser radiation of 3 ns; a line width of 250MHz; a repetition rate of 30 Hz and a power of about 100 mJ.

[Claim 10] 10. The method of Claim 9 wherein said laser is focused onto said arc tube via a 500 mm focal length, plano-convex lens.

[Claim 11] 11. The method of Claim 7 wherein the lamp is mounted within an enclosure and the laser is focused on to the arc tube through a window in the enclosure.